THE
VETERINARY JOURNAL

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Editorials.

THE VETERINARY PROFESSION AT THE BRITISH MEDICAL ASSOCIATION MEETING.

THOSE of our profession who desire to attend the Meeting of the British Medical Association, to be held in Glasgow between July 25 and 30, will be welcomed, and, indeed, are invited particularly for Thursday, July 27, when a discussion will take place of special interest on the Comparative Aspect of Disease, entitled "Animal and Vegetable Pathology in Relation to Human Disease," opened by Professors W. H. Lang, F.R.S., and F. Hobday, F.R.C.V.S.

The subject is of considerable importance both to the medical and the veterinary professions, and will not be the only one discussed on animal problems. Handled judiciously, it may be the opening of a new era, and be the means of bringing into closer bonds of fellowship the workers belonging to the two professions in the fight against disease. It is the first time that members of the veterinary profession have been asked to take so prominent a part in such a large and influential gathering of medical men as the British Medical Association comprises, and is a further token of the need which is universally felt for a closer bond between the two professions for mutual work in Comparative Medicine and Comparative Pathology.

Those who wish to attend or to offer papers on Comparative subjects should apply at once, and may have full particulars from either Professor Muir, the President of the Pathological Committee, the University, Glasgow, Dr. Donaldson, St. George's Hospital, Hyde Park, London, W., or from the Editor of the VETERINARY JOURNAL, c.o. Messrs. Balliere, Tindall & Cox, Henrietta Street, Covent Garden, London, W.C.

Any veterinary specimens of pathological interest will be welcomed

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for the Museum which is being formed, and further particulars of this can be obtained by writing to the Hon. Secretary, Dr. Haswell Wilson, M.B., The University, Glasgow.

THE "NATIONAL" AND "INTERNATIONAL" AMENITIES.

UNFORTUNATELY, owing to unforeseen and unavoidable circumstances, the Congress on Comparative Pathology, which it was intended to hold at Rome in September, is postponed until 1923, and those who had intended to take advantage of this occasion to combine with it the trip to the Italian Veterinary College will be much disappointed. They would have been assured of a very hearty welcome from our Italian colleagues, and their views of veterinary science in other countries, and the advantages of State-aided schools, would have been broadened very considerably.

We have, however, still got out own "National" Association meeting to think about, and the pabulum set before its members is very useful and instructive. Bath is a pleasant place at any time in which to spend a holiday, and the district around is very pretty. Combining instruction with pleasure, and with the annual chance of meeting old colleagues and friends, the Bath meeting bids fair to be as cheery as was the meeting last year at Chester, especially as it is backed up by such a live, vigorous association as the Mid-West and South Wales Society.

A suggestion which is well worth consideration for a future meeting, to be adopted as soon as the finances of the National Association will permit it, is the question of whether some international amenities might not be indulged in, and whether invitations might not be issued to societies in other countries to send delegates to attend our meetings.

An international exchange of ideas could not but produce good, both professionally and socially, and the only expense to which the Society need be put is the cost of entertaining the delegates whilst here. Their own respective societies would pay their travelling expenses, and the mere cost of hotel or entertainment here would be a very small item. From the Continent of Europe, and even from America, delegates might readily be sent who would time their European trip so that they arrived in England just when our own "National" was being held. It is always at the pleasantest time of year, and always held at some town with local surroundings of historic interest.

Reciprocation would be sure to follow, and delegates from England would be invited to return the visit. Those of the profession who have visited foreign Congresses can speak with authority of their value from an educational point of view, and on occasions like this the

language difficulty is always minimised, as amongst a collection of educated foreigners there are always a proportion who speak and write English fluently.

The American Veterinary Association Congress this year is to be held at St. Louis in August, and to any British veterinarian who happens to be in that country at that time a hearty welcome will be accorded. Their programme is a much longer and more diverse one than ours, and the attendance much greater, as it is no unusual thing for seven or eight hundred members to be present. Their clinical demonstrations are always numerous and good, as the American Association official pays special attention to the practical side of his congressists, and caters especially for the practitioner. Now is an especially good time to fraternise, and an invitation from the British National, with the dollar at its present rate of exchange, offers an opportunity for inviting delegates from our American counterpart which should be taken advantage of. It is a suggestion worthy of more than passing thought; indeed, it merits serious consideration.

TENTATIVE PROGRAMME FOR 1922 MEETING OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION AT ST. LOUIS, MO.

Monday, August 28.—Opening and General Session.

Monday evening.—President's reception.

Tuesday morning, August 29.—Section meetings.

Tuesday afternoon, General Session and Election of Officers.

Tuesday evening there will be a Smoker and Round Table at the Planters' Hotel, with entertainment.

Wednesday, August 30, and Thursday, August 31, there will be clinics both for large and small animals at East St. Louis. The large animal clinic will be in charge of Dr. H. E. Kingman as director, and Dr. S. L. Stewart, assistant director. Dr. J. C. Flynn will have charge of the Canine and Feline Clinic. At the Clinics a definite programme is being arranged and each part will be well carried out on a definite time.

On Thursday evening there will be sectional meetings and on Friday, September 1, general sessions.

It is probable that the Sections on Sanitary Science and Police and Education and Research will have programmes at St. Louis while the clinics are being held at East St. Louis, so that those who are not interested in the clinics will have an opportunity of attending interesting Sectional meetings.

N. S. MAYO, Secretary.

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THE VETERINARY PROFESSION IN AMERICA.

By E. M. NIGHBERT, D.V.S.,
Veterinary Inspector in London for the United States Bureau of Animal Industry.

THE American veterinary profession to-day is looking more upon the broader aspects of its work than ever before. Veterinarians in America realise and appreciate the great responsibility placed upon them and are preparing themselves accordingly. In preparing, it was found that there were many necessary things to consider and accomplish, in the way of better preparatory educational qualifications, better college instruction, regulatory laws and a liberal application of co-operation and organisation. These matters were constantly given attention and are being successfully accomplished.

There are five main factors in the United States of America that direct and regulate veterinary education and all branches of veterinary work. The United States Department of Agriculture through its Secretary, a Federal Cabinet Officer, outlines and enforces through Civil Service examinations just what educational qualification and college training veterinarians shall have before being employed in Government work. The Veterinary Division, United States Army, carries out similar requirements. The American Veterinary Medical Association also outlines an applicant's fitness for entrance into its organisation. The veterinary colleges are standardised as to entrance requirements of students and teaching hours and the various State laws in force, regulate practice, by requiring the passage of an examination prepared by a board of Veterinary Examiners.

Through these influential factors veterinary students now receive a four-year course of college study and training, before they will be recognised as veterinary workers in any branch of the profession. These higher educational requirements have been gradually attained and are fully supported by the profession and the public.

The veterinary profession in America is making use of all the facilities possible in advancing its work in the way of working more closely with research workers and the diagnostic laboratories throughout the country. Our veterinary societies, local, State, regional and national, are encouraged to work together with the view of harmonising efforts, thereby extending and making use of late and valuable scientific facts, and the best opinions on things that are perplexing in veterinary activities.

To-day the empiric practitioner is no longer a shining light with the farmer and stock-breeder. The profession is passing through depressed times, but all realise that time will bring back normal conditions.

Our profession has always felt a keen interest and fraternal feeling with the profession in Great Britain, and it is believed the profession of the two countries may be greatly benefited by closer acquaintance and co-operation in veterinary matters.

General Articles.

THE PATHOLOGICAL AND CLINICAL ASPECTS OF CYSTIC DISEASE OF THE OVARIES IN CATTLE.

By LESLIE P. PUGH, B.Sc., F.R.C.V.S.,
Sevenoaks.

Introduction.

The purpose of this Paper is to call attention to the fact that from amongst the various known types of cystic ovarian disease, it is possible to differentiate two which are of relatively frequent occurrence.

The recognition of these types is of considerable practical importance, since it is often possible to prescribe for each appropriate treatment, and thus prevent the death or premature slaughter of valuable cattle.

The majority of recent writers, including such authorities as Albrechtson, Hess, etc., make no distinction between the types here described. W. L. Williams (1) is a notable exception, and in 1921 he described two separate types which appear to be the same as those which the writer has identified.

For convenience of description an account of the pathology will be preceded by detailed reference to the clinical symptoms, and will be followed by a summary of those modes of treatment which the writer has found most efficacious.

Type I.—Clinical Aspect.

This type of disease is commonly included under the general heading "Nymphomania," and its victims show quite a number of characteristic symptoms, although there are naturally variations in individual cases.

The classical type is as follows:

A cow soon after parturition is noticed to be sexually excited at frequent intervals. Her voice deepens and becomes similar to that of the bull. She becomes excited when approached by another beast, often scraping her fore-foot in a manner similar to the male. In doing this the foot may strike the lower part of the chest wall and cause callosities.

If turned loose with other cattle, she will continually worry them by mounting their hind quarters and trying to induce them to reciprocate her actions. The majority of cows so affected will accept service from the bull almost at any time. Others, however, although they mount the bull, will move away from him if he attempts service.

Very soon after the onset of nymphomania, the muscles on either side of the sacrum sag inwards, causing depressions. This is due to the softening and slackening of the sacro-sciatic ligaments. As soon as this slackening has become established, the caudal end of the sacrum is noticed to be higher than before. After a few weeks, the whole sacrum is noticed to have assumed quite a different plane, the anterior end being slightly lower than the lumbar vertebræ immediately in front of it, whilst the posterior end is much elevated. In a proportion of cases, the whole sacrum seems to assume a higher level than the rest of the back, although even in these cases the caudal end is the higher.

When once this sacral malposition has been assumed, a grating sound can often be heard by anyone standing near the cow each time she moves her hind-quarters. This noise is due to the scraping together of the surfaces of the sacro-iliac articulation, owing to the interosseus ligaments about the joint becoming slackened. The cow walks badly, crossing her hind legs during progression. Whilst standing, her hind limbs are so approximated that she often presents one hock rested in front of the other. As the disease progresses, the beast loses condition and becomes narrow-chested. The spinous processes, as a result of the general muscle atrophy, become prominent and add to the appearance of ungainliness. In old-established cases, the pelvis becomes deformed, the tuber ischii being elevated and slightly approximated, whilst the external angle of the ilium tends to sink. When once this stage has been reached, spontaneous fractures of the pelvis are not at all uncommon. The shaft of the ilium and the pubic symphysis are the two sites most frequently implicated.

In the writer's experience, manual examination in these cases reveals a cystic condition of one or both ovaries, but an absence of corpora lutea. Together with this there is general atony of the rest of the genitalia, including an enlarged uterus and a widely-dilated cervix, through which issues a large amount of muco-purulent discharge. Almost invariably there is well-defined cervicitis. This type of disease is relatively easy to diagnose, and its salient features are in the main well recognised. The second type to which the writer desires to call attention is certainly of much more frequent occurrence, but it is far less obvious, and presents greater difficulty in diagnosis.

Type II.—Clinical Aspect.

This type has only two salient clinical characters, viz.: (1) Sterility, (2) Irregularity in the appearance of œstrum. The sterility is absolute while the disease persists, but disappears if cure can be effected, a fact of great importance to owners of valuable pedigree stock.

The œstral irregularities are often very small. Thus, a period of twenty days may be followed by one of twenty-two. Such small variations often escape detection unless careful records are kept, and this is seldom practicable. Nevertheless, they are of great importance in diagnosis, since, compared with Type I, this type has but few distinguishing characters.

There is no regular and progressive development of symptoms. The animal becomes sterile and useless for breeding or subsequent milking purposes. At the same time, it is not obviously ill and its usual fate is to be fattened for market that the owner may recover what portion of his loss is still to be obtained.

Manual examination, however, reveals a characteristic condition which might not otherwise be detected. Firstly, there will be found to be one or more irregularities of the ovary. Further palpation shows that these are cystic. They are, in fact, lutein cysts, and should they burst during examination, it is sometimes possible to detect the separation of the lutein tissue from its walls. As a rule, these cysts are smaller than those of nymphomania, but one meets with some exceptional cases in which they are as large as a tangerine orange. Secondly, there will almost always be signs of old or recent sepsis. The oviduct may be enlarged and easily palpable, or definitely adherent to surrounding structures. The uterus may contain a macerated fœtus, or show signs of chronic endometritis or pyometra. One meets with cases, however, that present no obvious disease other than that of the ovaries.

Thus, the clinical characteristics of Type I are those of a steadily progressive, crippling and, sometimes fatal, disease, while Type II is characterised by sterility, irregularity, and sepsis, none of which are obvious at first sight. Their pathology is as widely different as their symptomatology, and is briefly as follows:

Type I.—Pathology.

The pathology of this type appears to be as follows: The first stage is a progressive impoverishment of the whole system by the excessive milking which is required to produce records, and so add to the market value of the animal. At the same time, the unborn calf is absorbing a large part of the nutriment available. When the calf is born the demand for milk continues very large. When, in these circumstances, a Graafian follicle forms, it is scarcely surprising that

the contained ovum will sometimes die for want of nourishment. The follicle becomes a cyst, and this cyst appears to act as a foreign body and to keep up perpetual irritation of the ovaries. This irritation in turn must increase the blood supply and with it the ovarian secretion becomes more abundant. It must be admitted that this hypothesis of irritation is somewhat less precise than one would desire. It may be said that the action of these cysts is rather specific than mechanical, the products of disintegration of a partially developed follicle and ovum possessing some qualities of which one is at present unaware. But however this may be, the ensuing events justify one in supposing that the ovarian secretion is definitely increased.

It has been established by Blair Bell, etc. (6, 7, 8, 9) that the katabolism of calcium containing tissues is largely influenced by this secretion, and the final stage of this disease gives abundant evidence

FIG. A.

FIG. A (AND FIG. B ON THE OPPOSITE PAGE) ARE PHOTOGRAPHS OF CASE TAKEN ABOUT ONE YEAR AFTER THE LAST SYMPTOMS OF NYMPHOMANIA HAD BEEN OBSERVED, SHOW THE PERMANENT SACRAL AND PELVIC DEFORMITIES AFTER RECOVERY. IN FIG. A NOTE THE HIGH DISPLACEMENT OF THE SACRUM. IN FIG. B THE DOTTED LINE INDICATES ROUGHLY THE SHAPE OF THE HEIFER BEFORE BECOMING AFFECTED.

of excessive elimination of calcium. The sacro-sciatic and the sacro-iliac ligaments become slackened and relaxed, as do most others in less degree.

The bones are affected and a condition of osteomalacia results. The weakened pelvis, not completely controlled by its ligaments, yields to the influences of gravity and posture. The acetabula tend to be pushed upwards and inwards, so that the tubera ischii become elevated and approximated. The traction of the abdominal contents pulls down the attachments of the abdominal wall to the external angle of the ilium and deformities result. An interesting symptom of this extreme osteomalacia is the occurrence of the so-called "spontaneous" fractures. These must necessarily occur where the bones are weakest, or where they are subjected to the greatest stress. In

nymphomania the pelvic bones are commonly the weakest, and at the same time suffer exceptional stresses from mounting and being mounted by other animals. But the real cause of the fracture is not, of course, the comparatively trivial traumatism so sustained, but the underlying weakness of the bones.

The chief interest of the morbid anatomy as distinct from the pathology of this condition centres in the ovarian alterations. Cysts are always present, and these are usually situated on the surface of the ovary, so that one may be reasonably certain that their origin is in a Grăafian follicle or a lutein body. Since lutein tissue is conspicuous by its absence, it is probable that the first hypothesis is correct. It is difficult to offer any other explanation which accords with the appearances presented by the ovary, although, as has already been admitted, the precise factors which determine that the death of the ovum should lead to cysts formations have yet to be demonstrated.

FIG. B.—(See description of FIG. A.).

TYPE II.—PATHOLOGY.

The whole pathological significance of this type centres in the development of the cyst, for the contributory septic changes are not in themselves specific or in any way exceptional. That these changes are in fact contributory does, however, need demonstration, and this point is dealt with later.

By study of a considerable amount of material, one can make out a sequence of events (see pages 238-239). The cysts finally produced are indistinguishable for nymphomania cysts, except by the highly significant fact that in a cyst-bearing ovary of Type II there will be found one or more corpora lutea, while these are never found in Type I. At an earlier stage it is easily shown that the Type II cyst develops in a

NORMAL CORPUS LUTEUM FORMATION (A).

(1) Graafian Follicle ready to Burst. (2) Ruptured Follicle with Blood Contents. (3) Rapidly Proliferating Theca Interna. (4) Compression of Blood Clot by Lutein Cells. (5) Clot becoming Organised.

NORMAL CORPUS LUTEUM FORMATION (B).

(1) Fully Developed Corpus Luteum, Chestnut Colour. (2) Corpus Luteum of Pregnancy. Yellow in Colour. (3) Sinking of the Corpus Luteum into the Ovary. Destruction of Lutein Cells almost Complete. (5) Corpus Albicans.

CYSTIC OVARIAN DISEASE.

(1) Large Cysts and an Absence of Lutein Tissue. (2) Partial Destruction of Ovarian Tissue by Cyst. (3) Two Distinct Follicular Cysts in Apposition. (4) Central Embedded Cyst.

CYSTIC CORPUS LUTEUM FORMATION IN AN OVARY.

(1) Small Central Cyst in Corpus Luteum. (2) Cyst increasing in Size. (3) Gradual Destruction of Lutein Tissue by Pressure Atrophy. (4) Second Graafian Follicle ready to Burst. Fine Rim of Lutein Cells Exterior to Cyst Wall. (5) Second Corpus Luteum Forming. (6) All Traces of Lutein Tissue Gone. Second Corpus Luteum definitely Cystic.

corpus luteum. The lutein tissue is slowly displaced by the growing cyst until no more can be detected, and finally the cyst reaches the stage of full development. (See pages 238 and 239.)

Williams (1) was the first to describe these cysts, and he described their formation to infection of the crater left by rupture of a Graafian follicle. These craters are filled with blood, and remain open to infection for a very short time. It is probable but a few hours before the contraction of the ovarian tissues over them renders them safe from an infection from without. It is thus to be expected that a relatively small number of lutein cysts should form, whereas the condition which cause the follicular cysts of nymphomania are such as would tend to affect all follicles.

Further evidence in favour of a septic origin of lutein cysts is afforded by the following facts:

(1) In the majority of cases pelvic infection is readily demonstrated.

(2) Cure cannot be obtained as long as sepsis remains, and since infection of the Fallopian tubes is likely to resist treatment longer than that of more accessible organs, there is good reason to suppose that Fallopian tube infection is an important factor.

(3) Actual adhesions between the ovary and the pavilion of the oviduct are not at all uncommon in this disease.

(4) The secondary infection of the ovary found in cases of tuberculosis of the oviduct has its commonest origin in the craters of ruptured follicles. An example of this is shown on page 238.

(5) There is no evidence in any way suggestive of hæmic infection nor any constitutional disorder which could be adduced in explanation of what we must therefore attribute to local conditions.

A possible objection to the theory of local infection might be based on the fact that the cyst contents are sterile. The answer to this is that if they were not, we should be dealing not with a cyst, but with an abscess. It is in accordance with all that is known of human and animal pathology that one should encounter evidences of very considerable powers of overcoming infection, and these are possibly resident in the blood serum. It cannot be considered anything but a legitimate inference from observed facts that one should invoke these powers to explain the overcoming of the initial infection of burst follicles and the subsequent formation of cysts.

The best working hypothesis is, therefore, as follows: The effused blood in the crater of a burst follicle is infected. The follicle closes up and corpus luteum formation and development of infection go on side by side. But the reaction excited by the sepsis soon suffices not only to abolish the sepsis, but also to prevent any further development of the corpus luteum, which atrophies as the size of the resulting cyst

increases. Applying this to the clinical findings, one discovers a ready explanation of events. It has been known for some time that an infection of the uterus (even if the Fallopian tubes be healthy) will keep a corpus luteum functioning almost indefinitely. This in turn will prevent the appearance of œstrum. The periodical destruction of the corpus luteum will allow œstrum to supervene before another lutein body can form. This explains the symptom of irregularity, while the sepsis present causes the sterility; this it may do in several ways.

(1) Cervicitis, endometritis or salpingitis, either separately or combined, are sufficient in most cases to kill any spermatozoa that attempt to pass along towards the pavilion of the oviduct.

(2) If the spermatozoa reach the pavilion and the ovum becomes fertilized, the latter has to run the same risks of infection, and, perhaps, has to essay fixation to a mucous membrane in a state of catarrh.

(3) If successful so far, the destruction of the corpus luteum by the cyst would probably terminate the life of the ovum.

In some cases the writer is of the opinion that the oviducts are actually occluded by catarrhal exudate.

TREATMENT.—TYPE I.

Acting on the hypothesis put forward as to the causation of this disease, two lines of treatment must be adopted: (*a*) local; (*b*) general.

(*a*) *Local Treatment.*—This consists in the discovery and rupture of the cyst or cysts. This procedure is comparatively easy when once the method of discovering the ovaries per rectum is mastered. The presence of a small or centrally placed cyst may sometimes be difficult to diagnose, but this, like the others, imparts to the affected glands a characteristic rotundity. The superficially placed cysts rupture quite easily on exerting digital pressure per rectum. A deep-seated cyst (the result of chronicity) gives more difficulty and treatment varies. The ovary so affected must be brought back over the vagina, where considerable pressure can be safely brought to bear. If this measure fails, one may puncture the cyst through the vaginal wall with a trocar and canula, or hollow needle. If this also fails, and one is dealing with the left ovary, öophorectomy is a justifiable surgical interference. This latter procedure not only gets rid of the cyst, but also greatly diminishes the total ovarian secretion, which, as already pointed out, is largely responsible for this disease. That öophorectomy should be permissible on the left side but not on the right is due to the fact that right-sided conception is very much more frequent than left; in the writer's experience, probably at least four times more frequent. This can be correlated with the fact that the right ovary is as frequently larger than the left. Both ovaries should be re-

examined a week later to see if either has become cystic again. This may well be the case, as relapses are common, especially if the general treatment is not adhered to.

If, however, all other treatment fails, öophorectomy of either gland is advisable in valuable animals, and has proved successful on quite a number of occasions.

The ovarian abnormalities having been remedied as far as possible, the secondary metritis must be brought under control, and this is best effected by careful intra-uterine douches. The writer uses freshly prepared Dakin's solution at about 100° Fahr., followed by a weak Lugol solution at the same temperature. It must be remembered that the cervical canal of the cow, when affected with cervicitis, is often a very difficult passage to negotiate with any instrument, be it metal or rubber. The mucosa covering the circular muscular folds becomes hypertrophied, with the result that the passage is not only very crooked, but the catheter used is apt to lodge in the resulting sacculi. Should an instrument become lodged in one of these, it may be thought by the operator that there is an obstruction in the passage. Should force be applied to the instrument (which is never justifiable), perforation is caused, with septic peritonitis as a possible sequel. Even rupture of the mucosa itself is likely to be followed by abscess formation and total sterility. In order to facilitate the above operation the writer some time back had a few instruments constructed.

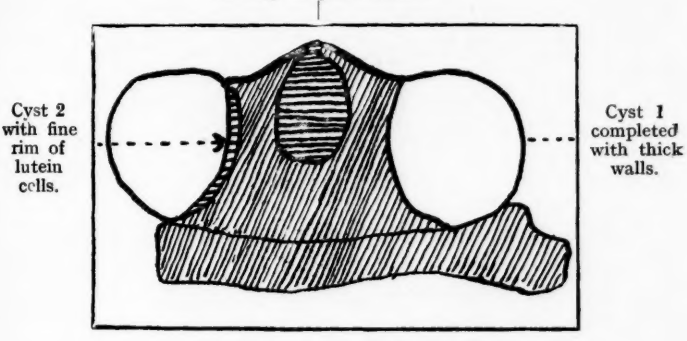
These were designed with the idea of approximating the cervix to the vulval opening, and retaining it there during the catheterisation. In any case, a return-flow catheter should invariably be used of the Bozeman type. If the return flow fails to appear from the uterus, a rectal examination should be made at once to determine the cause, which may be due to accumulation of the fluid at the far end of a paretic uterus, or to perforation. After this process of douching, all fluid contents of the uterus should be massaged out with a hand in the rectum. The diseased cervix should be painted with a silver solution, or, in bad cases, with strong Lugol solution. The only drawback to the latter is that if any escapes on to the vaginal mucosa, violent straining takes place, and the animal gives evidence of a great deal of pain.

It is hardly necessary to insist on the importance of asepsis in these operations. This is difficult when one realises the close proximity of the anus above the site of operation. A nervous subject can often be exasperatingly annoying by continually passing fæces in small amounts immediately her hind quarters are touched.

(*b*) *General Treatment.*—This consists in complete isolation of the subject, allowing of no possibility of sexual excitement. Isolation

should include removal from the vicinity of any animals in order that they may not even see them. Copulation should on no account be allowed till a regular appearance of œstrum has been established. This procedure of complete isolation is absolutely essential, however the local treatment is carried out. A liberal diet, rich in calcium constituents, should be allowed, such as bran and crushed corn.

RIGHT OVARY FROM CASE 30 (B.W.), ASSOCIATED WITH MACERATED FOETUS CHRONIC METRITIS AND BILATERAL SALPINGITIS.


Sinking Corpus Luteum.
Cyst 2 with fine rim of lutein cells.
Cyst 1 completed with thick walls.
Small Cyst in organised core.

DIAGRAMATIC EXPLANATION OF ABOVE PHOTOGRAPH.

TREATMENT.—TYPE II.

This, as in Type I, consists of (*a*) local, and (*b*) general treatment.

(*a*) *Local Treatment.*—When once the condition has been diagnosed, treatment should aim at getting rid of infection from all accessible positions, and consists of intra-uterine douches, as mentioned in the treatment of Type I, and the painting of the cervix with astringent solutions.

If any difficulty is experienced in discovering the cervical passage, it is an advantage to squeeze out the cystic corpora lutea, and thereby induce œstrum a few days later, when another attempt can be made. Unless profound cicatricial changes have taken place, the cervical canal can be much more easily passed through at this period.

Sterile heifers are quite frequently affected with this type of cystic disease, and as the vulva and vagina of these subjects are so small (preventing the entrance of the hand in many cases) the writer had made a dilator easily inserted into the vagina. The arms of this instrument open on a parallel by the turning of a screw. After five minutes the surrounding muscles become tired and the mucosa stretched, so that a well-lubricated hand can easily be inserted without causing pain or injury to the sensitive vaginal mucous membrane.

Contra-indications to any attempt to treatment are—palpable salpingitis, adhesions of the ovaries to the pavilion of the oviducts, adhesions of the oviducts themselves, the bony remnants of a macerated fœtus, old-standing pyometra with thickened uterine walls. These subjects should be fattened for the butcher. The diagnosis of these conditions, however, is of considerable economical importance, since pedigree animals so affected are often kept for a considerable period in the hope that " Nature " will ultimately effect a cure, and the cost of feeding these animals during that period is almost an entire loss to the owner.

If only one oviduct is enlarged there is a chance of successful treatment. Uni-lateral salpingitis, however, is not common, since the infection that causes the inflammation in one oviduct soon extends along the uterine mucosa to the other oviduct.

Non-enlargement of the Fallopian tubes and a certain amount of " tone " to the uterus are of good prognostic significance. The actual condition of the ovary, in the writer's experience, is of far less importance than the degree of sepsis, from the point of view of prognosis. Often the most trying cases are those exhibiting only a slight variation from the normal in the ovaries.

The whole crux of the problem lies in the integrity of the oviducts, and the only way to find out if treatment has been successful is to allow copulation at several œstral periods.

(*b*) *General Treatment.*—There is very little to mention under this heading. Copulation should not be allowed during treatment. There is no doubt in the writer's opinion that it is instrumental in keeping up the hyperæmic condition of the cervix.

Intermediate Cases.

The writer has observed quite a number of lutein cyst disease cases develop into nymphomaniacs after a period of time. The history

in these cases is that the cow had first been noticed to be slightly irregular, sometimes late, and other times early. Œstrum later appeared to be of longer duration, sometimes lasting a week. During this time the ligaments tend to slacken, but recover when œstrum passes off. Once this stage has been reached, it is not long before nymphomania becomes evident, with all its clinical manifestations. Examination of ovaries removed from these cases reveals a large number of "spent" lutein cysts, with a small amount of lutein tissue scattered through the gland. Ultimately all this tissue disappears.

OVARY SHEWING TUBERCLE IN AN OLD RUPTURED GRÄAFIAN FOLLICLE IN A CASE OF TUBERCULAR SALPINGITIS.
NOTE.—In order to take this photograph the adhesions were broken down, and the attachments can be clearly seen.

CONCLUSIONS.

In view of the practical and theoretical considerations herein set out, and as the result of a large experience of cases, the writer feels that the following conclusions have a right to at least provisional acceptance.

(1) Apart from cystic degeneration of neoplasms and other rare conditions, there are two frequently occurring types of cystic disease of the ovaries in cattle having considerable clinical importance.

(2) In the first type, general impoverishment of the system by calving, excessive milking, etc., leads to death of the ovum whilst still in the follicle. A cyst results, which is associated with increase of the internal secretion of the ovary, and this in turn leads to nymphomania

and to such structural changes as osteomalacia. Unless the cyst be ruptured, cure cannot be expected, and this alone will not be successful, but must be followed by a careful general treatment. This type may be called follicular cystic disease.

(3) In the second type, pelvic disease, particularly of the oviducts, leads to infection of the developing corpus luteum, and this becomes cystic. No particular symptoms other than irregularity can be ascribed to the cyst, and the treatment is that of the pelvic disease. From the diagnostic point of view, the recognition of this type is extremely important.

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SEPTICÆMIA IN HARES.

By J. F. CRAIG, M.A., M.R.C.V.S., *Principal, Royal Veterinary College of Ireland*, AND
DANIEL KEHOE, *Professor of Pathology and Bacteriology, Royal Veterinary College of Ireland.*

IN the spring of this year two dead hares were forwarded to the College for examination from a local coursing club. It was stated that a coursing match was to have been held, but during the previous three days 31 hares had died suddenly, and there was no apparent cause for the losses. There were no deaths before previous matches, and the diet, consisting of chaffed oats and turnips, had not been changed. The deaths occurred very rapidly, and the only symptoms noted were that the animals staggered and were weak.

A post-mortem examination made of both hares revealed identical lesions. The tissues of the body appeared very soft and moist, and the abdominal vessels engorged with blood; the spleen was enlarged and thickened, and the spleen pulp almost black and soft. The abdominal lymph glands were reddish in colour, and Peyer's patches of the intestines were swollen and deeply congested. There were no other abnormalities.

Blood films were prepared from the heart blood and were found to contain small bipolar *coccobacilli* in enormous numbers. The

organism was isolated in pure culture, and its cultural characters and its effects on a number of experimental animals noted.

Morphology of the Organism.—The organism, which might be called the *bacillus leptisepticus*, to some extent polymorphous, is rounded in shape, usually slightly longer than broad, and not more than 1 μ in its greatest diameter, and in blood films it presents bipolar staining. It is usually arranged singly, but occasionally appears in pairs, rarely in chains, of not more than three or four individuals. It is slightly motile and does not form spores. In appearance it resembles closely the *bacillus avisepticus*. It stains well with Giemsa, with dilute carbol fuchsin, and other basic anilin dyes, but does not stain with Gram. It grows moderately well as an aerobe at 37° C., but requires to be subcultivated at short intervals.

Cultures.—On agar slants it appears in 24 hours as a transparent thin smear, or in small dew-like colonies on the surface, and does not spread much on further cultivation. It has a brownish tint by transmitted light. A light greyish deposit forms in the water on condensation. On further cultivation the colonies become whitish on the surface and less transparent.

On gelatine slants it forms only slight growths in the form of a thin clear smear.

In broth it renders the medium turbid in 24 hours, and a slight deposit forms at the bottom of the tube.

In Peptone litmus media it produces acid, but no gas with mannite, saccharose, and slightly with raffinose, maltose, glucose, and lactose, while it produces no change with galactose, inulin, salicin, dextrin, or glycerin. It renders litmus milk slightly acid, but does not produce coagulation.

Inoculations.—Three rabbits, one hen, and one duck, were used for experimental inoculations. 1 cc. of heart blood from one of the dead hares was injected subcutaneously into one rabbit, while each of the other animals received a subcutaneous injection of 1 cc. of an emulsion in sterile water of a 24 hours' culture of the organism in agar.

Result of Inoculations.—The three rabbits died in 48 hours after inoculation, and the lesions found in each case corresponded closely with those in the hares. In one rabbit the anterior mediastinum also presented a number of small hæmorrhages. The *bacillus leptisepticus* was found in large numbers in blood films from the heart blood of each rabbit, and was isolated in pure culture.

The hen and the duck were unaffected by the inoculation.

Comments.—It is apparent from these experiments that the disease in the hare is distinct from fowl cholera, although it is caused by an organism of the *septicæmia hæmorrhagica* group. It may be closely

related to rabbit septicæmia, although it is not apparently pathogenic for the duck or fowl, so differing from the rabbit septicæmia described by Theobald Smith and Thoinot and Masselin.

With regard to the incidence of the hæmorrhagic septicæmia in Ireland, I may here state that I have not come across an outbreak of fowl cholera for nearly ten years, and I have never yet had under investigation, nor had my attention drawn to, an undoubted case of *septicæmia hæmorrhagica* of cattle, while among sheep I have met with an occasional outbreak.

In the outbreak of septicæmia among hares under discussion, no evidence has been obtained as to its origin. It is possible the organism may have been introduced with the food, or that it may have been living as a saphrophyte on the soil.

Measures of isolation and disinfection were recommended to check the losses, but no further information was obtained regarding the further course or history of the outbreak.

Clinical.

POISONING BY CASTOR OIL BEANS.

By CAPT. S. W. MARRIOTT, O.B.E., F.R.C.V.S.,
Royal Army Veterinary Corps.

THE following cases of poisoning by castor oil beans occurred recently in horses of "A" Squadron, 7th Q. O. Hussars, stationed at Mhow.

During the night of March 21, 1922, three horses were admitted to hospital showing slight signs of colic.

I saw these cases on the early morning of the 22nd ; they all showed complete loss of appetite, dullness, injection of the mucous membrane, and a peculiar staring appearance of the eye ; only one case, A 10, showed any symptoms of abdominal pain at this time.

At 9 a.m., it was reported to me that practically all the horses of "A" Squadron had refused their food on the evening of the 21st and the whole of the Squadron had refused the morning feed of the 22nd

I inspected the squadron and found all the horses to be off their feed, so had the temperatures of all the horses taken and admitted three to hospital which were showing a rise in temperature (over 103°), and injection of the mucous membranes. These three also showed the peculiar staring of the eye that had been noticed in the three original cases.

The horses had for the previous four days been fed on the following ration :—

Oats 4 lbs., bran 3 lbs., maize 4 lbs.

Oats.—These were very dirty, containing a large quantity of mud and having the appearance of being sweepings from a store ; they also contained a large proportion of beans, which I took to be castor oil beans (this was subsequently confirmed by the Director, Imperial Laboratory, Muktesar).

These oats had been screened to remove as much of the mud and dirt as possible before being fed. I ordered the immediate stoppage of the use of the oats and had every horse given a bran mash and 8 oz. mag. sulph. and all the horses of " A " Squadron were rested till the 26th, and fed on bran 6 lbs., maize 4 lbs.

The majority of the horses started eating on the 23rd and by the 26th all had regained their normal appetite. Two more cases were admitted to hospital on the 23rd with symptoms similar to the three original cases, and one more on morning of the 24th instant.

The cases admitted to hospital were treated with aloes ʒ iv on admission, followed by ammon. carb. ʒ iv, nux vomica ʒ iv, twice daily, and given linseed gruel, lucerne and bran mashes.

All the cases except one (A. 10) made a good recovery and were fit for return to duty by the 31st.

Case No. A. 10, developed well-marked symptoms of enteritis and died on the morning of the 25th and showed the following conditions on post-mortem examination.

Stomach.——Contents normal, mucous membrane normal.

Small colon.—Contents fluid and bright yellow-coloured ; mucous membrane as a whole normal but showed a few hæmorrhagic areas.

Large colon and cæcum.—Contents fluid and dark slate, grey colour and foul smelling. A fair amount of black gravel was present all through the colon and cæcum ; the mucous membrane was of a dirty grey colour, slightly thickened and injected.

Rectum.—Contents fluid and slate-grey coloured ; mucous membrane injected.

Liver.—Dirty yellow-coloured, size and consistence normal.

Bladder and kidney.—Normal.

Heart and lungs.—Normal.

The only noticeable points were the absolutely liquid state of all the contents of the intestines. the grey colour of the contents of the large colon, and the presence of a considerable quantity of small gravel in the colon and cæcum.

No cases occurred after the 24th instant and all cases have now made a complete recovery.

The oats were a small supply that had been obtained locally owing to the failure of the usual supply, and were probably the sweepings of a barn in which castor oil beans had also been kept.

THREE CASES OF EVERSION OF THE BLADDER IN THE MARE.

By FRANK AULTON, M.R.C.V.S.,
Tutbury.

ALTHOUGH by no means infrequently met with in a breeding district, eversion of the bladder is a complication which the country practitioner must always expect to get at some time or another, and on three separate occasions this year (May 23, June 2, and June 4) I had cases of this kind. Each occurred as the result of the straining which accompanies parturition.

Those on May 23 and June 2 were tolerably simple and easy to deal with, although in the one on June 2 I had to return the bladder before I could get the foal away. In each case the bladder was slowly reduced by gentle manual manipulation, and then, when sufficiently small, the rounded and well-oiled end of a cane was used to complete the retroversion.

The case on June 4 was much more formidable, as the everted bladder was dilated as large as a stable bucket and contained a quantity of small intestine. In addition to this, the farmer, with the clever intuition of the amateur, had slit it with his penknife, on the surmise, as he explained to me, that it was the " water bladder."

As the bowels were already visible, and I saw no prospect of a successful issue, the protruding mass being as large as an ordinary stable bucket, I asked for a gun and put an end to the poor brute's sufferings.

Cases often run in sequences, and three everted bladders within a fortnight was almost, if not quite, a record.

AN OBSTINATE CASE OF CONSTIPATION.

By JOHN FILMER, B.V.S. (MELB.),
Katarring, Australia.

THE following case is, I think, of interest as indicating what a horse can suffer and still recover.

Subject.—A well-bred grey gelding, a trotter.

February 20.—11 a.m. : Patient lying down at intervals. Temperature, pulse and respiration normal. The owner had given Ol. lini. with no result. I diagnosed impacted double colon, probably at the diaphoragmatic or supra sternal flexures, as the pelvic flexure was comparatively empty, and gave a bolus containing ammonia carbonate and nux vomica. I also injected eserine and pilocarpine hypodermically, and the bowels responded well. 5 p.m. : Breathing heavy. Temperature 103. Gave Ol. lini. and another stimulating ball.

February 21.—10 a.m.: Much easier. As no fæces had been passed I again gave eserine and pilocarpine, but with no result.

February 22.—Noon: Still no bowel action. Gave enema, Ol. lini. and Ol. crotonis, and a stimulating ball. 7 p.m.: Temperature 105. Breathing very heavy.

February 23.—10 a.m.: Temperature 103. Much easier. No bowel action. 6 p.m.: Gave stimulating ball, and enema of cold water by means of a hosepipe, about 6 ft. of which were passed into the bowel and then attached to a water tap.

February 24.—Patient easy and eating a little. Gave an enema with a hosepipe at 7 a.m., noon and at 6 p.m. Rumblings could now be heard in the bowels occasionally. Before this there had been nothing more than a tinkle at long intervals.

February 25.—Hose enemas at 7 a.m. and noon. Still no action.

February 26.—Hose enema 9 a.m. Slight cough. Marked dullness left side of thorax. Temperature, pulse and respiration almost normal.

February 27.—Fœtid, brownish, watery discharge from the nostrils and stinking breath. Breathing heavy. I diagnosed gangrene of the lung, and the case seemed absolutely hopeless. No fæces had been passed since the 20th. The patient was still remarkably bright, and I now gave Electuary of Camphor and Pot. Chlor. to be given three times daily. The owner on his own initiative started giving eggs in milk to keep up strength.

February 28.—Slight action of bowels.

March 1.—No change. Bowels continue to act slowly.

March 4.—Fœtid discharge and stinking breath still present. Bowels acting slowly. Pony very weak, but still fairly bright.

March 5.—No change.

March 6-8.—The owner said that the pony coughed a lot, discharging matter like decayed liver. This confirmed my diagnosis of gangrene.

March 9.—Discharge ceased. Breath sweet. Still a little soreness and dullness left on the sides of thorax. Bowels normal.

The pony from then onwards made an uninterrupted recovery, and started work on April 3. Pony never entirely ceased eating, and remained wonderfully bright throughout, though it became very weak and lost a lot of condition.

If such constitutions were more common we should have few fatal cases.

AMPUTATION OF THE UTERUS IN A COW.

By FRANK AULTON, M.R.C.V.S.,
Tutbury.

AMPUTATION of the uterus, although not a common operation, may be undertaken in the cow with a much lighter heart as regards the sequel than in the mare ; and the following instance is recorded with the idea of encouraging the younger graduate never to despair, but, as the old Somersetshire motto says, to " do zummut."

The patient, a three-year-old Shorthorn dairy cow, had calved unexpectedly in the night, and was found by the farmer in the field early one morning with a dead calf beside her and the uterus everted. She was a very wild beast, and it took the farmer and his man two and a half hours to drive her out of the field into a shed. When I saw her on May 9, about 9 a.m., the womb was very dirty and terribly lacerated ; in fact, torn half way across, so that my hand, when examining her, passed through the wall into the abdomen. I cleaned it, and, as it was absolutely useless to attempt to return it, decided to amputate.

After passing a strong piece of thin cord around the neck below the opening of the urethra, and tightening it up in the form of a ligature, I amputated the badly-lacerated portion of the womb below this and allowed the ligatured end to slip back into the abdominal cavity.

No after treatment was done, and the patient made an uninterrupted recovery.

TWENTY-FOUR NAILS AND AN IRON RIVET IN THE STOMACH OF A DOG.

By E. R. AMBROSE,
Student, Royal Veterinary College, London.

Subject.—Three months' old lurcher.

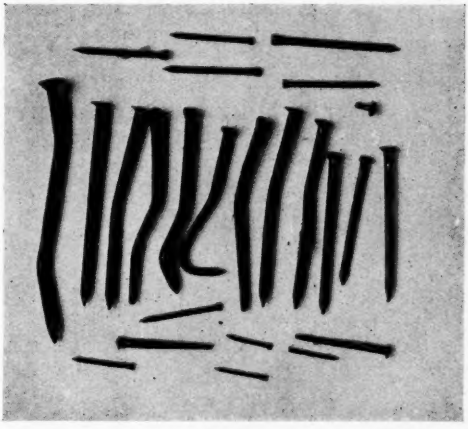
History.—A puppy which was undergoing treatment for burns on the pads of the feet was brought to the infirmary in the morning to have the wounds re-dressed, and appeared to be otherwise in normal health. The owner remarked that the animal was suffering from "worms." Later in the same day the owner again brought the puppy, saying that she thought that it had a " stomach full of stones ! " On being asked " Why stones ? " her reply was that she could hear them rattling when it was picked up.

Symptoms.—The patient exhibited no symptoms of abdominal pain beyond dullness, and on manipulation only showed but slight distress. Foreign bodies, grouped closely together, could be easily felt in the greater curvature of the stomach.

Diagnosis.—The presence of the above led me to suppose that the animal had swallowed a considerable number of matches (see group of small 1-inch nails in photograph).

The Prognosis was grave, and it was explained to the owner that the only chance was to operate and attempt to remove the foreign bodies, but little hope of success was extended.

Treatment.—Surmising that wooden matches were the foreign bodies, the antidote for phosphorus was given, and all food withheld during the night. The next day the patient was anæsthetised with Ethanesal and prepared for operation. On gaining entrance into the abdominal cavity the contents of the stomach could be more definitely



felt. A large obstruction could be felt lying across the greater curvature and did not yield to digital pressure, while no perforation of the stomach was to be observed. The conclusion was then arrived at that the foreign bodies were not matches, but nails. It seeming hopeless to pursue the operation further, in view of the very limited chance of recovery, the patient was destroyed.

Post-mortem revealed twenty-four nails and one small rivet to a total weight of 3½ ozs. Ascarides were also present in large numbers, some having migrated to the œsophagus.

It was afterwards disclosed that the animal had been housed in a wood shed used for general purposes—carpentering amongst others. Furthermore, the animal had the previous morning swallowed and successfully evacuated a cork.

THE ADMINISTRATION OF DESSICATED ORCHIC SUBSTANCE.

By F. D. TUTT, M.R.C.V.S., F.L.S., F.Z.S.,
Winchester.

It may interest the readers of The Veterinary Journal to know that the Pomeranian bitch on which I tried the dessicated orchic substance (as recorded on page 20 of the January Veterinary Journal) has had four very fine puppies.

POISONING BY CHENOPODIUM IN SHEEP.

By A. S. CANHAM, M.R.C.V.S.,
Lecturer in Veterinary Science,
School of Agriculture, Potchefstroom, South Africa.

One sees quite an amount of writing about Ol. Chenopodii in the various veterinary journals, but I have not seen anything about poisoning by this drug. In South Africa here we have a very fine number of worm parasites affecting sheep, the chief being the wire-worm (*Hæmonchus Contortus*), followed closely by the nodular worm, the threadneck strongyle (*hacmatodirus spathiger*), the whip-worm, and last, but not least, the sheep hookworm (*Bunostomum trigonocephalum*).

To keep these parasites in check Sir Arnold Theiler, Director of Veterinary Research and Education, issued a remedy from the laboratory which contains copper sulphate and arsenite of soda. With it is a pamphlet giving instructions how to use it. Monthly dosing is advocated, but O. Rivers, Esq., the officer in charge of sheep here, has dosed as often as three times in ten days in badly infected cases with much success.

Now and again one meets with cases in which the remedy has little if any effect; to these I shall refer. Having three ounces on hand I decided to try the chenopodium. Three Romney Marsh sheep were dosed after 36 hours' starvation, and for three consecutive mornings received half a drachm. Four hours after dosing they were allowed food, and on the third day these were turned out. In a month's time they had improved considerably, and have since never looked back. The monthly dosing with the laboratory powders is sufficient to keep them in good "nick."

Having had such good results from the aforementioned, and on other later occasions, we decided to dose four young cross-bred (Suffolk-Persian) lambs. These were six months old and a fourth cross. They were very poor in condition, badly reared, possibly on account of their

mothers being poor in milk. From smears from fæces, eggs and worms were found, and on being cultivated the larvæ were hatched out. The worms were mostly *Hæmonchus Contortus* and the *Œsophagastomum Columb.* These had been dosed at monthly intervals with the laboratory powders from two months of age, but apparently no satisfactory change had been observed.

Although all were of the same age they varied in weight as follows: Smallest 30 lbs., 35 lbs., 40 lbs. and 50 lbs. They were starved for 30 hours, and then they received ℥ss Ol. Chenopodii in ℥ii of milk. No nausea was shown, as has been observed in other cases. Four hours after this they were supplied with a little water and lucerne hay, so as to cause the medicine to reach at least the second stomach; twenty-four hours after this was repeated with no untoward results, and 24 hours after this ℥i each was given, thus making ℥ii of Chenopodium to each lamb.

The two heaviest lambs did not suffer in any way, while the two smaller, in three to four hours after, were suffering from extreme nausea and trembling violently. Ultimately one became worse than the other. It could not stand, frothed at mouth, frequent attempts at swallowing, grinding teeth, increased respirations; the temperature was normal. Its legs were stuck out rigidly, head drawn back, but the back was not arched, it being quite straight. At times the eyeballs rotated, but at others were fixed in a staring fashion. Every now and then powerful tremors would shake the body, and during these the respirations were correspondingly increased. Attempts to place it on its feet were productive of increased tremors, and the lamb once more fell over.

Pot. Bromide ℥i was given, and this it swallowed normally. A certain amount of relief was obtained, but the lamb died at 5 p.m. The post-mortem showed nothing abnormal.

The next lamb, that did not seem to be affected so badly, also received Pot. Brom. ℥i, but at 5 p.m. its symptoms became accentuated, so 90 per cent. Alcohol ℥ss, in Water ℥ii, was given. In a short while trembling almost ceased, and the lamb attempted, although still down, to nibble lucerne. The following morning, although still weak, it was on its feet and feeding. Its recovery was uneventful, and in three days' time it had quite got over its experience. The remaining two lambs never showed any symptoms, and at the present moment all three are doing remarkably well.

Thus it would seem that the doses for sheep—especially the high-priced animals we have at this institution—might be regulated according to pounds per body weight, say 1 minim per lb. body weight, with a maximum of ℥iss for a Wanganella ram full grown.

A CASE OF CYSTIC OVARY IN A GOAT.

F. A. E. CREW, M.D., D.Sc.

Paper from the Animal Breeding Research Department, The University, Edinburgh.

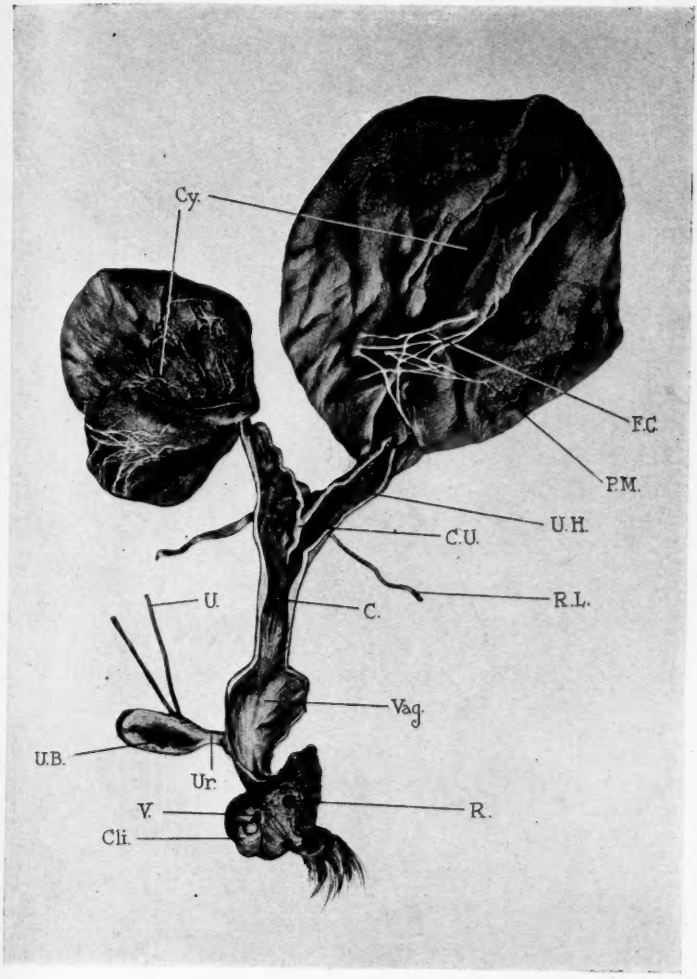
THE reproductive system of a goat which had exhibited abnormal sexual behaviour was received by Mr. F. H. Stainton, F.R.C.V.S., who desiring a complete examination and report sent on the specimen to the Department. It is thought that the case is of sufficient interest to merit record.

The history of the case is incomplete but Mr. Stainton was able to secure the following information. The mother of this individual had produced a series of malformed kids, the kind and degree of the abnormality varying in the different cases. This kid grew rapidly and nothing unusual was noticed until it had attained maturity when the goat was observed always to be in season. To cure this condition clitoridectomy was performed, but no good result was obtained. Service was effected on several occasions but the goat remained sterile. Latterly a faint but characteristically male smell could be detected.

The outstanding feature in the history of the case is absolute sterility associated with persistent oestrum and the ultimate development of the male smell.

On examination it is seen that the vulva, urinary bladder, ureters, urethra, external urethral orifice, rectum, anus, vagina, cervix, uterus, and Fallopian tubes are as those of a typical female in structure and arrangement. The clitoris presents an operation scar. In the situation of the ovaries two large cysts, from which the thin fluid contents have been evacuated, are present. A little of this fluid yet remains and it coagulates with a formalin fixative. The sac of the cyst on the right measures 33 by 25 cms., that on the left 17 by 13 cms., and each is covered externally with glistening peritoneum. No trace of ovary can be identified in the wall of the cysts or elsewhere. Each cyst is unilocular and upon the internal surface are numerous areas of heaped-up fibrinous material firmly adherent to the cyst-wall. In certain of these the material has the form of fibrous bands, free in their middle portion but securely attached at either end to prominent hillocks of muscle based upon the wall of the cyst. The fibrous bands and muscular hillocks simulate in a remarkable way the chordæ tendineæ and musculæ papillares of the ventricles of the heart. The ovarian blood vessels are markedly varicose.

On section each cyst-wall is seen to consist of an external peritoneal investment, an internal layer of much flattened epithelium, and a thick middle layer of fibrous tissue amid which there are the plentiful remains of degenerate ovarian tissue. Cells similar to those of the zona granu-



DORSAL VIEW OF THE GENITALIA. THE CYSTS HAVE BEEN EVERTED IN ORDER TO SHOW THE PECULIAR ARRANGEMENT OF THE FIBROUS BANDS AND UNSTRIPED MUSCLE.

C. Cervix.
Cli. Clitoris.
C.U. Corpus uteri.
Cy. Cyst.
F.C. Fibrous cords.
P.M. Hillocks of unstriped muscle.
R. Rectum.
R.L. Round ligament.
U. Ureter.
U.B. Urinary bladder.
U.H. Uterine horn.
V. Vulva.
Vag. Vagina.

losa and luteal cells in abundance can be identified. Scattered widely degenerate atretic follicular cysts are to be found.

The condition is bilateral, though more pronounced on the right side. The ovaries are not thinned out and incorporated in certain areas of the cyst-wall. Ovarian tissue is present in all parts. The conclusion is therefore that, though each cyst is large in size and apparently unilocular, the condition is not a distention phenomenon of the Fallopian tubes or Parovarium within the layers of the broad ligament, but that each cyst is the ovary itself. The fact that each is lined by a flattened epithelium is not significant since this is merely the result of the pressure of the fluid.

The peculiar arrangement of fibrous bands and muscle, which proves to be unstriped, though at first suggesting the method in which the musculæ papillares and chordæ tendineæ of the heart could have been evolved, is in all probability nothing more than the much attenuated remains of the connective-tissue partitions in what had been a multilocular cystic ovary. Areas of ovarian stroma adherent to the wall would become free in their middle portion and adherent only at the periphery as the rounded cyst enlarged, and the bands so formed would tug upon the wall at the points of their attachment, thereby producing local elevations of the unstriped muscular tissue present in the wall.

The case is one of cystic ovary and is remarkable for the large size of the apparently unilocular cysts. The condition has resulted from the non-rupture of the Graafian follicles, due to the presence of an abnormally dense tunica albuginea. There is no conclusive evidence of any previous acute ovaritis so that this denseness of the tunica may have been a developmental abnormality. In any case the ova could not be extruded and the liquor folliculi would accumulate in such quantities that by pressure the ovarian tissue would be destroyed and a cyst would be produced.

Since the mature ova could not be extruded from the surface of the ovary the goat would be sterile. The persistence of luteal cells in quantity can account for the disturbance of the œstrous cycle and in part for the widespread follicular degeneration. Sufficient ovarian tissue still remains to make the condition different from double ovariotomy. The secondary sexual characters would still be female in type though the ovarian destruction is such that it is not remarkable that in certain respects this individual had come to resemble the male.

DENTIGEROUS CYST.

By T. O. RICHARDSON, F.R.C.V.S.,
Tarporley.

Subject.—Bay four-year-old Welsh cob, gelding.

History.—Purchased by a crofter to do light work, some three weeks before I saw him. He noticed at the time a swelling below the off ear, but as it was not tender when pressed, and the vendor said it had been there for two years, he thought it of no importance. After working the animal for a week the swelling enlarged, became tender to the touch, and the cob objected to having the bridle put on. It then burst and discharged a fœtid pus. He was brought to my yard, and on probing the aperture the presence of hard foreign body was revealed. The part was shaved, painted with tincture of iodine, and a crucial incision made over the whole enlargement and the flaps dissected back. A rudimentary molar was revealed, firmly fixed in the cavity with fibrous tissue. The molar was gripped with a pair of forceps and dissected out, the cavity being plugged with tow soaked in tincture iodine. This was removed the next day and a dressing of 1 in 500 perchloride given, with instructions to syringe out daily. The wound completely healed in about two weeks.

The molar measures $1\frac{3}{4}$ inches in length by $1\frac{1}{2}$ inches circumference.

TETANUS WITH COMPLICATIONS.

By T. O. RICHARDSON, F.R.C.V.S.,
Tarporley.

Subject.—A six-year-old bay hunter, gelding.

I was called in to see the animal on January 7, and found him standing in the usual position, with saliva hanging from the mouth, jaw firmly fixed, tail up, but he did not show any extra spasms when disturbed beyond the membrana nictitans being drawn over the eye. I could find no trace of a wound nor any history of one.

A double dose of P. D. & Co.'s serum was injected, box darkened, and the usual instructions given. On the 8th another dose of serum was injected, and as he was unsteady, was placed in slings. Daily doses of serum were given until the 18th. He sucked a little thin gruel, plus milk and eggs. The bowels acted regularly, and urine was passed until the 14th, when he showed colicy pains. Four grains morphia and one grain of atropine were injected, and as no fæces had been passed since the 13th he was given enemas of soapy water every two hours. The pains ceased in about half an hour, but nothing was passed. One pint of Ol. Ricini injected per rectum.

January 15.—Still no action of the bowels. Horse looking haggard, no pain, pulse 95, temperature 101 ; not taking gruel.

January 16.—Pains return, and looks hopeless. Rectum empty, and no peristalsis on auscultation of abdomen. Jaw moved much more freely. Gave 1 gr. eserine hypo. He became very violent, and in 25 minutes passed copious quantities of fæces, quietened down, and has made a splendid recovery.

Reviews.

CANINE DISTEMPER, ITS COMPLICATIONS, SEQUELÆ AND TREATMENT. By CAPT. HAMILTON KIRK, M.R.C.V.S. Pp. 226 and 28 illustrations. Published by Baillière, Tindall & Cox, London. Price 10s. 6d.

IN a book of some 226 pages, well chosen and carefully put together, Capt. Hamilton Kirk has collected within one cover practically everything of value and interest which has been written upon distemper, in the English language, and for this reason alone, if for no other, the student and the practftioner owe him a debt of gratitude.

To the dog-breeder, to the master of hounds, to every dog owner, and even to the veterinary surgeon, the word distemper comes like a nightmare, and anything which can give valuable knowledge and information as to the prevention or treatment of this most dreaded disease will be welcomed by them all equally.

No one but those who are right in the canine world can thoroughly appreciate the losses which this disease gives rise to every year, and it is a reproach to us as a profession that so little research work has been done on the subject in this country. The dog is the most valued companion of man and bears a greater sentimental value than any other animal, and, apart from the pecuniary value of the race for its show points, these animals are worth special attention at the hand of the veterinarian. The puzzle often is, with this disease, for the practitioner to know what to do and on what lines to proceed as regards treatment; and he falls back merely on the treating of symptoms as they occur and an attempt to build up the natural resources of the system in their fight against the enemy. Beyond this he is at present helpless and for this reason he has hoped, and hoped a hundred times again, that some specific preventative or curative vaccine would have been discovered and placed in his hands. That there are so-called preventative and curative sera and vaccine being sold both to the profession and to the general public is well known, and indeed one has only to see the advertisement columns of professional and lay journals to discover them, but to those who have tested their faith in them all have, up to the present, acted like broken reeds.

Practically all of them are discussed, and discussed in all fairness too, without prejudice. Under some twelve chapter headings, the historical aspect being taken first, the susceptibility, etiology, predisposing cause, sources of infection and their practical avoidance, symptoms, preventive inoculation, and all varieties of vaccine and medicinal treatment, are fully entered into, and illustrations are interspersed throughout the text. As a ground work and stepping-

stone for future research it is invaluable and as a guide to the veterinary practitioner, the student and even to the dog owner himself, we can confidently recommend its perusal. Well printed and excellently bound, it is a book which should receive a place on the shelf of every practitioner whose daily life brings him canine patients.

THE ART OF HORSE SHOEING. By WILLIAM HUNTING, F.R.C.V.S. *Fourth Edition*, revised and edited by A. B. MATTINSON, O.B.E., M.C., F.R.C.V.S., D.V.S.M., Major R.A.V.C. Militia; late Commandant, Army School of Farriery; examiner in Stable Management and Shoeing, R.C.V.S. *Publishers:* Baillière, Tindall & Cox, 8, Henrietta Street, London, W.C.2. Pp. VIII and 223. Figures in text 169. Price 10s. 6d. net.

THIS book comprises 16 chapters and 223 pages. Hunting's original work consisted of 11 chapters and 115 pages. The additional and welcome matter in this fourth edition consists of well-written sections on frog pressure and development, foals and unshod feet, military shoeing, roughing or sharpening, interferences and injuries caused by the shoe and occasional shoes. The editor has added to and revised the other chapters which dealt with the form and action of the foot, preparation of the foot, the form and manufacture of shoes, selection of shoes, fitting and application of shoes, roughing, injuries from shoeing, shoeing bad feet and leather and rubber pads.

We find much in the book to admire and are especially pleased with the plain, common-sense words of the editor on all that he discourses on. We have never read a book on shoeing that covers so much ground as this one does, and is so satisfactory. We like the frank way in which Major Mattinson leaves some of the very debatable points in connection with shoeing open for the discerning intellect of the reader and his practical knowledge to form judgment. This is quite noticeable and refreshing in the chapter on "interferences and injuries caused by the shoe." We think that the farrier himself will say when he reads the volume, "Here is a work by a man who understands our work, who appreciates us and our difficulties and who is worth following as a guide and instructor." To the student and veterinary surgeon the modernity of the book will appeal, and the clear and sensible views taken are all worthy of consideration and adoption.

Major-General Blenkinsop's knocked-up-toed shoe is illustrated and described. It is claimed for it that it will give 50 per cent. and upwards of longer wear, it assists clearance of the ground and avoids the jar which always takes place on new plain shoes.

Major Mattinson is rightly facetious and somewhat sarcastic on the questions sometimes put before farriers in examinations on shoeing and technical knowledge. He states that "many of the queries have not the remotest bearing on farriery," and that he has frequently exclaimed when reading them, "Such knowledge is too wonderful for me; it is high; I cannot attain unto it."

Just a few little observations and criticisms now which are given with all goodwill.

We do not agree with the remark in the preface that "the number of working horses has not appreciably diminished." Heavy motor

lorries (that in our opinion ought not to be allowed on the present roads at all), the light runabout lorry, and the motor fire engine have displaced many cart horses and vanners. The owners of forges know this to be a fact. On page 122 *the influence of wet weather on the wear of shoes* ought to be mentioned. It is a factor frequently overlooked by horse-owners and managers. *Economy* is one advantage that might be mentioned in the case of effective anti-brushing shoes. A horse that hits himself will not be able to work and will have many days in the stable if the defect is not remedied. Everybody is out for economy nowadays. We prefer nails driven through a sand-crack and clenched to the French clips illustrated at 186. Our experience of the French clips is that they soon work loose (long before the shoe is worn out) and become ineffective. We use instruments and adopt the procedure as described at page 258 of Hobday's "Veterinary Medicine" (Courtenay) and have always found them satisfactory and at present have three horses working under the conditions named. With regard to *leathers*, is it not possible that they give some support to the frog where a horse is shod with toe pieces and calkins? Is *the paste* put under the leather really composed in many instances of *tar and oatmeal?* Perhaps it ought to be, but it isn't. We even think that *tow* and tar are used more frequently than oatmeal and in most cases one of the common ingredients used is by no means hygienic.

Pads are almost essential on many light, quick-moving horses in this part of the country (North of England and blue flints). The animals need them on both fore and hind feet if the occupants of two-wheeled vehicles are to be safe. The best anti-slipping pads that we have used are bar pads with *deep* grooves running across the bar, similar to those in Gray's bar pad illustrated at p. 199. Many pad manufacturers make these now and they are in our opinion much better than those with the *shallow* diamond-shaped pattern illustrated in *Fig.* 150.

We find nothing in the book about shoeing a horse with *side-bones*. This is a point about which plain instructions would be very useful and acceptable and we think it ought to be included in a volume on shoeing.

We congratulate Major Mattinson on his editing of the book, it is a very valuable one, and a standard work on the art of horse-shoeing.

G. M.

INTERNATIONAL CONGRESS ON THE HISTORY OF MEDICINE.

(VETERINARY SECTION.)

THE above Congress is to be held in London from July 17 to 22, and includes a section devoted to Veterinary Medicine, at which the following papers will be read and discussed:

1. Major-Gen. Sir F. Smith on "The History of Veterinary Anatomy in England during the 16th, 17th, and 18th Centuries."

2. Mr. F. J. Cole : " Ruinus on the Anatomy of the Horse."
3. Dr. L. Moulé : " Le Médis des Grecs et le Malleus des Latins."
4. Mr. F. E. Bulloch :
5. Mr. H. J. Sevilla : " L'Art Vétérinaire Antique ; le syndrome ' coliques ' dans l'Hiffatric Grecque."

Members of the profession are invited to attend, and full particulars can be obtained upon application to the General Secretary of the Congress, Dr. J. D. Rolleston, M.D., Alexandra Mansions, Chelsea, S.W.

THE INTERNATIONAL CONGRESS ON COMPARATIVE PATHOLOGY IN ROME.

A COMMUNICATION has been received from Professor Perroncito, the learned President of the International Congress on Comparative Pathology, to say that the above Congress, which it was proposed to hold in Rome in September, has been postponed untill next year (1923).

Details have not been given beyond a statement of the fact that the postponement is made owing to unavoidable and unforeseen circumstances. For those members of the profession who had already booked places for the Italian trip, the news will be a great disappointment, as it was anticipated that this would have been as instructive and enjoyable as was the trip which carried the party across to Belgium at Whitsuntide.

AGRICULTURAL RESEARCH SCHOLARSHIPS.

THE Ministry of Agriculture and Fisheries awards annually a number of research scholarships in agricultural science. The scholarships are of the value of £200 per annum, tenable for three years, and are open to graduates with honours in Science (or equivalent qualifications) of a British University. Nominations on the prescribed form must be received not later than July 15. Further particulars and the form of nomination (A208-1) may be obtained from the Ministry, 4, Whitehall Place, S.W.1.

THE FEDERATION OF MEDICAL AND ALLIED SOCIETIES.

THE annual dinner of the above Federation was held at the Café Royal, Regent Street, W., at 7.15 p.m., on Wednesday, June 7.

The President, Sir Berkeley Moynihan, K.C.M.G., C.B., M.S., presided, and the Rt. Hon. Sir Alfred Mond, Bart., M.P., Minister of Health, the Rt. Hon. the Lord Islington, G.C.M.G., D.S.O., and the Rt. Hon. C. Addison, M.D., M.P., were amongst the guests who were present. Members of the National Veterinary Association

(which is affiliated to the Federation) are welcomed at these gatherings and the official delegates attended on this occasion.

Full particulars can be obtained by applying to the Medical Director (Lieut.-Col. Howard Mummery, M.R.C.S., L.R.C.P.), 12, Stratford Place, W.1.

DIAGNOSIS OF LAMENESS DUE TO DIVERSE LESIONS OF THE TENDONOUS SHEATHS, OR OF THE ARTICULATIONS, WITH THE HELP OF ANÆSTHESIA OBTAINED BY MEANS OF AN INJECTION INTO THE SYNOVIAL CAPSULE.

By G. FORSSELL,
Veterinary Surgeon, Stockholm.

In many cases, ordinary clinical examination is not sufficient by itself to enable the examiner to fix on the exact nature of the pathological alterations indicating the seat of lameness. In other cases, perhaps, one succeeds in making out the presence of such and such lesions, without it being possible by the aid of simple methods to discover the exact origin of the lameness. For the rest, it can only be said that the lameness may be due to pathological processes of which one has succeeded in demonstrating the existence, seeing that the real cause may quite escape investigation. In anæsthetising such or such nerve trunk, one can only at the most circumscribe the lameness in the perimeter of the anæsthetised region. As for establishing with certainty—in case of a positive result of the anæsthesia practised—the exact seat of lameness in the region thus delimited, this is often impossible. Anæsthesia practised on such a ramification of great nerve trunks only represents a very imperfect method of realising the chances of a satisfactory anæsthesia of the region of innervation. By injecting directly into the tendon sheaths, or into the articulations, an anæsthetising solution of cocaine or novocain, with adrenalin added, one generally succeeds in making out whether the pain or inability is or is not situated in the tendonous sheaths or the articulations implicated. Nevertheless, a certain number of tendonous sheaths and articulations make it impossible, from a clinical point of view, for these injections to reach them on account of their anatomical situation. The presence of certain secondary processes does not always seem to compromise at all the results which one has a right to hope for in the application of this method; thus, lameness caused by interphalangean periarthritis of the coronet disappears after an injection practised on this articulation, and this in spite of the presence of considerable peri-articular exostosis. This method, therefore, enables us also to make out the genesis or origin of certain cases of lameness.

—*Diagnos av haltor, etc.* G. M.

Correspondence.

BRITISH MEDICAL ASSOCIATION.—Annual Meeting, Glasgow, 1922. Pathological Museum.

To the Editor, THE VETERINARY JOURNAL.

DEAR SIR,—The Committee appointed to organise the Pathological Museum in connection with the annual meeting in July, 1922, propose to arrange the material under the following heads :

(1) Exhibits bearing on discussions and papers to the various sections.
(2) Specimens and illustrations relating to any recent research work.
(3) Instruments relating to clinical diagnosis and pathological investigation ; *x*-ray and other photographs.
(4) Individual specimens of special interest, or a series illustrating some special subject.

It is also proposed to make an effort to gather together a series of exhibits relating to diseases of animals and plants of economic importance.

The Committee wish it to be understood that the above are only suggestions, and if there is any subject in which you are specially interested and can supply interesting specimens, they will be welcomed.

The Museum will occupy a convenient position in the same building as that in which the sectional work is carried on, and will be easy of access.

The Committee desire to enlist your hearty co-operation, and I shall be glad to hear from you if you are able to make an exhibit. Every care will be taken of specimens, and the contents of the Museum will be insured.

It is hoped that it will be possible for arrangements to be made whereby exhibitors may have an opportunity of demonstrating their specimens.

Yours faithfully,
G. HASWELL WILSON,
Hon. Secretary.

Glasgow University,
January, 1922.

To the Editor of THE VETERINARY JOURNAL.

GENTLEMEN,—The Siberian Veterinary Zootechnical Institute was established at Omsk in 1918 in order to study local Siberian conditions of zootechny, to organise a strugge against animal disease, and to supply Siberia with veterinary surgeons. In spite of bad conditions of life after a great war against Germany, and the impossibility of communicating with foreign countries, the Institute widely developed its activity,

thanks to the initiative and personal energy of the scientific personnel of the old Veterinary Institute at Kazan. Unfortunately now-a-days the Institute cannot do without foreign help. It needs school-books, various laboratory equipment and veterinary scientific books. Thinking it the only way to emerge from the present deplorable conditions, a group of professors have the honour to appeal to you, in the name of culture and science, for moral and material support, as much as is possible, in order to secure the existence of the Institute and its collaborators. Our misfortunes are very great, owing to the recent war and the bad harvest of last year.

In the hope of receiving from our colleagues food supplies, etc., which can be sent to Siberia,

A. KONERVESKY,

Sapajnikan. *Formerly Rector of the Institute.*

Personal.

OUR French colleagues have recently honoured two members of the veterinary profession in Canada, Mr. Rutherford, C.M.G., a graduate of the R.C.V.S., now retired and a Member of the House of Representatives in Ottawa, and Mr. Daubigny, of Montreal. The former is elected an honorary member of the Central Veterinary Society of Paris, and the latter is decorated with the rank of "Officier" of the French Order of the "Merite Agricole."

NOTICES.

All communications should be addressed to 8, Henrietta Street, Covent Garden, London, W.C.2. Telephone: Gerrard 4646. Telegrams: "Baillière Rand, London."

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